

Try These

1. An object falls from a skyscraper and hits the ground after 5 s. The acceleration of this object due to gravity is 10 m/s^2 . What was the change in velocity of this object?



$$\Delta v = ?$$

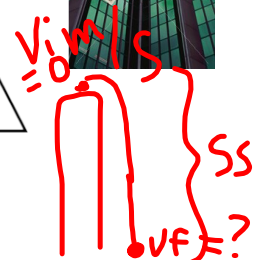
$$a = 10 \text{ m/s}^2$$

$$t = 5 \text{ s}$$

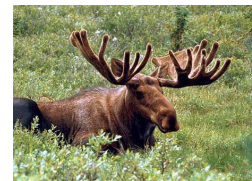
$$\Delta v = a \times t$$

$$\Delta v = 10 \text{ m/s}^2 \times 5 \text{ s}$$

$$\Delta v = 50 \text{ m/s}$$



2. A moose sees an "intruder". How long does it take the moose, running at 1.4 m/s , to reach 2.7 m/s if it accelerates at 0.3 m/s^2 ?

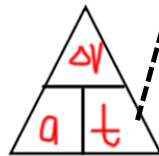


50 m/s

$$\Delta v = 1.3 \text{ m/s}$$

$$a = 0.3 \text{ m/s}^2$$

$$t = ?$$



$$v_i = 1.4 \text{ m/s}$$

$$v_f = 2.7 \text{ m/s}$$



$$2.7 \text{ m/s}$$

$$v_f - v_i = \frac{2.7 \text{ m/s} - 1.4 \text{ m/s}}{1.3 \text{ m/s}}$$

$$t = 4.3 \text{ s}$$

$$t = 4 \text{ s} \quad (1 \text{ SD})$$

10.

First

$\Delta V = a \times t$

$\Delta V =$

$a = 0.50 \text{ m/s}^2$

$t = 7 \text{ s}$

$\Delta V = V_f - V_i$

$V_i = 1.4 \text{ m/s}$

$V_f = ?$

7 s

Answers to some of the questions

4. 1.1 m/s^2

5. 32 m/s

6. 500 cm/s^2 OR 5 m/s^2

7. $a = 4.6 \text{ m/s}^2$

8. a) $a = 6.1 \text{ km/h/s}$

* b) $t =$ $\underbrace{1.4 \text{ m/s} + 3.5 \text{ m/s}}_{1.4 + 3.5}$

9. $a = 2.4 \text{ m/s}^2$ $V_i \rightarrow V_f$

10. $\Delta V = 3.5 \text{ m/s}$

$\Delta V = V_f - V_i$

$3.5 \text{ m/s} = V_f - 1.4 \text{ m/s}$ $+1.4$

$4.9 \text{ m/s} = V_f$